

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Original) A control system for controlling a control quantity of a subject to be controlled, said control system comprising:

a control quantity acquisition section for sequentially acquiring instantaneous values of the control quantity;

a timing judgment section for sequentially determining a time duration of each of specific kinds of behaviors of the controlled subject based on the values of the control quantity acquired by the control quantity acquisition section;

a behavior pattern judgment section for sequentially determining a behavior pattern which each of the behaviors of the controlled subject matches from among multiple behavior patterns based on the values of the control quantity acquired by the control quantity acquisition section during the time duration of each of the behaviors sequentially determined by the timing judgment section;

a control parameter storage section for storing control parameters in correlation with each of the multiple behavior patterns;

a control parameter read-out section for sequentially reading out the control parameters stored in the control parameter storage section in correlation with the behavior pattern which each of the behaviors of the controlled subject matches as determined by the behavior pattern judgment section; and

a control section for controlling the controlled subject based on the control parameters sequentially read out by the control parameter read-out section.

2. (Original) The control system according to the claim 1 further comprising:

a behavior evaluation value calculating section for sequentially calculating an evaluation value of the behavior performed by the controlled subject based on the values of the control quantity acquired by the control quantity acquisition section during the time duration of each of the behaviors sequentially determined by the timing judgment section; and

a control parameter update section for updating the control parameters stored in the control

parameter storage section based on the evaluation value sequentially calculated by the behavior evaluation value calculating section.

3. (Original) The control system according to the claim 2, wherein the control parameter update section updates the control parameters used during the time duration of each behavior corresponding to the evaluation value sequentially calculated by the behavior evaluation value calculating section.

4. (Original) The control system according to one of the claims 1 through 3, wherein the timing judgment section determines timings at which the control quantity acquired by the control quantity acquisition section take extrema as being a start timing and an end timing of the time duration of each of the behaviors based on the values of the control quantity acquired by the control quantity acquisition section.

5. (Previously Presented) The control system according to claims 1, 2, or 3, wherein the controlled subject is a ship, the control quantity is the ship's heading, and the control section controls a steering device of the ship.

6. (Original) A control method for controlling a control quantity of a subject to be controlled, said control method comprising:

a control quantity acquisition step of sequentially acquiring instantaneous values of the control quantity;

a timing judgment step of sequentially determining a time duration of each of specific kinds of behaviors of the controlled subject based on the values of the control quantity acquired in the control quantity acquisition step;

a behavior pattern judgment step of sequentially determining a behavior pattern which each of the behaviors of the controlled subject matches from among multiple behavior patterns based on the values of the control quantity acquired in the control quantity acquisition step during the time duration of each of the behaviors sequentially determined in the timing judgment step;

a control parameter read-out step of sequentially reading out control parameters stored in correlation with the behavior pattern which each of the behaviors of the controlled subject matches as determined in the behavior pattern judgment step from a control parameter storage section storing the control parameters in correlation with each of the multiple behavior patterns; and

a control step of controlling the controlled subject based on the control parameters sequentially read out in the control parameter read-out step.

7. (Original) A control system for controlling a control quantity of a subject to be controlled, said control system comprising:

a control quantity acquisition section for sequentially acquiring instantaneous values of the control quantity;

a timing judgment section for sequentially determining a time duration of each of specific kinds of behaviors of the controlled subject based on the values of the control quantity acquired by the control quantity acquisition section;

a behavior pattern judgment section for sequentially determining a behavior pattern which each of the behaviors of the controlled subject matches from among multiple behavior patterns based on the values of the control quantity acquired by the control quantity acquisition section during the time duration of each of the behaviors sequentially determined by the timing judgment section;

a control parameter acquisition section for sequentially acquiring control parameters corresponding to the behavior pattern which each of the behaviors of the controlled subject matches as determined by the behavior pattern judgment section; and

a control section for controlling the controlled subject based on the control parameters sequentially acquired by the control parameter read-out section.

8. (Original) A control method for controlling a control quantity of a subject to be controlled, said control system comprising:

a control quantity acquisition step of sequentially acquiring instantaneous values of the

control quantity;

a timing judgment step of sequentially determining a time duration of each of specific kinds of behaviors of the controlled subject based on the values of the control quantity acquired in the control quantity acquisition step;

a behavior pattern judgment step of sequentially determining a behavior pattern which each of the behaviors of the controlled subject matches from among multiple behavior patterns based on the values of the control quantity acquired in the control quantity acquisition step during the time duration of each of the behaviors sequentially determined in the timing judgment step;

a control parameter acquisition step of sequentially acquiring control parameters corresponding to the behavior pattern which each of the behaviors of the controlled subject matches as determined in the behavior pattern judgment step; and

a control step of controlling the controlled subject based on the control parameters sequentially acquired in the control parameter read-out step.

9. (Previously Presented) The control system according to claim 4, wherein the controlled subject is a ship, the control quantity is the ship's heading, and the control section controls a steering device of the ship.

10. (New) A control system for controlling a heading of a ship to be controlled, said control system comprising:

a heading of the ship acquisition section for sequentially acquiring instantaneous values of the heading of the ship;

a timing judgment section for sequentially determining a time duration of each of specific kinds of behaviors of the ship based on the values of the heading of the ship acquired by the heading of the ship acquisition section;

a behavior pattern judgment section for sequentially determining a behavior pattern which each of the behaviors of the controlled ship matches from among multiple behavior patterns based on the values of the heading of the ship acquired by the heading of the ship acquisition section during the time duration of each of the behaviors sequentially determined by the timing

judgment section;

a control parameter storage section for storing control parameters in correlation with each of the multiple behavior patterns;

a control parameter read-out section for sequentially reading out the control parameters stored in the control parameter storage section in correlation with the behavior pattern which each of the behaviors of the controlled ship matches as determined by the behavior pattern judgment section; and

a control section for controlling a steering device of the controlled ship based on the control parameters sequentially read out by the control parameter read-out section.